



Xerox Docket No. A3239-US-NP

**PATENT APPLICATION**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of

Jock D. MACKINLAY et al.

On Appeal from Group: 2176

Application No.: 10/687,486

Examiner: A. LONG

Filed: October 17, 2003

Docket No.: 131754

For: SYSTEMS AND METHODS FOR EFFECTIVE ATTENTION SHIFTING

**APPEAL BRIEF TRANSMITTAL**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Attached hereto is our Brief on Appeal in the above-identified application.

The Commissioner is hereby authorized to charge Deposit Account No. 24-0037 in the amount of Five Hundred Ten Dollars (\$510.00) in payment of the Brief fee under 37 C.F.R. 41.20((b)(2). In the event of any underpayment or overpayment, please debit or credit our Deposit Account No. 24-0037 as needed in order to effect proper filing of this Brief.

Respectfully submitted,

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BRIEF ON APPEAL

Appeal from Group 2176

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TABLE OF CONTENTS

	<u>Page</u>
I. REAL PARTY IN INTEREST .....	1
II. RELATED APPEALS AND INTERFERENCES .....	2
III. STATUS OF CLAIMS .....	3
IV. STATUS OF AMENDMENTS .....	4
V. SUMMARY OF CLAIMED SUBJECT MATTER .....	5
VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL .....	11
VII. ARGUMENT .....	12
A. <u>Claims 1, 3-5, 10, 12-18, 37, 39-42 Are Not Anticipated By Microsoft Excel</u> .....	12
B. <u>Claims 19, 21-23, 28, 30-36, 43 and 44 Would Not Have Been Obvious Over Microsoft Excel</u> .....	14
C. <u>Claims 7, 9, 25 and 27 Would Not Have Been Obvious Over Microsoft Excel in View of Grudin</u> .....	15
D. <u>Claims 6, 8, 11, 24, 26 and 29 Would Not Have Been Obvious Over Microsoft Excel in View of Grudin and further in view of Tan</u> .....	15
VIII. CONCLUSION .....	16
APPENDIX A - CLAIMS APPENDIX .....	A-1
APPENDIX B - EVIDENCE APPENDIX .....	B-1
APPENDIX C - RELATED PROCEEDINGS APPENDIX .....	C-1

**I. REAL PARTY IN INTEREST**

The real party in interest for this appeal and the present application is Xerox, by way of an Assignment recorded in the U.S. Patent and Trademark Office at Reel 015550, Frame 0355.

**II. RELATED APPEALS AND INTERFERENCES**

There are no prior or pending appeals, interferences or judicial proceedings, known to Appellant, Appellant's representative, or the Assignee, that may be related to, or that will directly affect or be directly affected by or have a bearing upon, the Board's decision in the pending appeal.

**III. STATUS OF CLAIMS**

Claims 1, 3-19, 21-37 and 39-47 are on appeal.

Claims 1, 3-19, 21-37 and 39-47 are pending.

Claims 1, 3-19, 21-37 and 39-47 are rejected.

Claims 2, 20 and 38 are canceled.

**IV. STATUS OF AMENDMENTS**

No Amendment After Final Rejection has been filed.

**V. SUMMARY OF CLAIMED SUBJECT MATTER**

The exemplary embodiment of the present invention are directed towards methods, systems, apparatuses, and means of shifting attention of a user. In particular, the claims determine a focus of attention and the location of a display event, determine the distance from the focus of attention to the display event, and display an attention shifting display element. The attention shifting display element is based on, amongst other considerations, a distance between the focus of attention and the location of the display event. The element is based such that different types of attention shifting display elements are used for different distances.

The invention of claim 1 is directed to a method of shifting attention. The method includes the steps of determining the location for a focus of attention (see at least page 2, line 19; page 4, lines 18 and 27-30, page 7, lines 15-17; page 8, lines 14-18 and 27-29; page 9, lines 1 and 2; page 11, lines 28-34, and page 12, line 22; and Fig. 4, S200; and Fig. 5 S1000), determining a display event (see at least page 2, line 19; page 9, lines 3 and 11-13; and Fig. 4 S300) and determining the location of the display event (see at least page 4, line 19; page 7, lines 15-17; page 9, line 14; page 13, lines 3-7; and Fig. 4, S400; and Fig. 5, S1200). The method further includes determining an attention shifting display element based on the display event, the determined location of the display event and the focus of attention (see at least page 2, lines 19-21; page 4, lines 20-22; page 7, line 17-19; page 9, lines 23-25; page 10, lines 30-34; page 14, lines 7-14; page 15, lines 8 and 9; and page 18, lines 15-17; and Fig. 6, S1520). The method also has a step of determining a distance between the focus of attention and the display event (page 4, 19-20; page 8, lines 9-11 and 20-28; page 13, lines 7-14; and page 20, lines 19-24; and Fig. 5, S1300). The attention shifting display element is determined based on the determined distance (see at least page 10, line 34 through page 11, line 2; page 11, lines 5-24; page 12, lines 26-30; page 13, lines 23-30; and page 15; lines 15-20), such that different types of attention shifting display elements are determined for different distances



(see at least page 4, line 18; page 7, lines 15-17; page 8, lines 14-18 and 27-29; page 9 lines 1 and 2; page 11, lines 28-34; and page 12, line 22; and Fig. 5, S1000).

The invention of claim 12 is directed to a method of determining an attention shifting display element. The method includes determining a focus of attention (see at least page 2, line 19; page 4, lines 18 and 27-30, page 7, lines 15-17; page 8, lines 14-18 and 27-29; page 9, lines 1 and 2; page 11, lines 28-34, and page 12, line 22; and Fig. 4, S200; and Fig. 5 S1000) and determining a location of a display event (see at least page 4, line 19; page 7, lines 15-17; page 9, line 14; page 13, lines 3-7; and Fig. 4, S400; and Fig. 5, S1200). The method further has a step of determining an attention directing portion of an attention shifting display element based on a distance between the focus of attention and the location of the display event (see at least page 10, line 34 through page 11, line 2; page 11, lines 5-24; page 12, lines 26-30; page 13, lines 23-30; and page 15; lines 15-20), such that different types of attention shifting display elements are determined for different distances (see at least page 4, line 18; page 7, lines 15-17; page 8, lines 14-18 and 27-29; page 9 lines 1 and 2; page 11, lines 28-34; and page 12, line 22; and Fig. 5, S1000).

The invention of claim 19 is directed to a system of shifting attention. The system includes an input/output circuit for receiving a display event information (see at least Fig. 1 and 2, a memory (see at least Figs. 1), a processor (see at least Figs. 1-3), an attention determination circuit that determines a focus of attention (see at least page 2, line 19; page 4, lines 18 and 27-30, page 7, lines 15-17; page 8, lines 14-18 and 27-29; page 9, lines 1 and 2; page 11, lines 28-34, and page 12, line 22; and Fig. 4, S200; and Fig. 5 S1000) and a display event location determination circuit that determines the location of the display event (see at least page 4, line 19; page 7, lines 15-17; page 9, line 14; page 13, lines 3-7; and Fig. 4, S400; and Fig. 5, S1200). Additionally, the system includes an attention shifting display element determination circuit that determines an attention shifting display element based on the

display event information, the location of the display event and the location of the focus of attention (see at least page 2, lines 19-21; page 4, lines 20-22; page 7, line 17-19; page 9, lines 23-25; page 10, lines 30-34; page 14, lines 7-14; page 15, lines 8 and 9; and page 18, lines 15-17; and Fig. 6, S1520), and a distance determination circuit that determines the distance between the focus of attention and the display event (page 4, 19-20; page 8, lines 9-11 and 20-28; page 13, lines 7-14; and page 20, lines 19-24; and Fig. 5, S1300). The attention shifting display element is determined based the determined distance (see at least page 10, line 34 through page 11, line 2; page 11, lines 5-24; page 12, lines 26-30; page 13, lines 23-30; and page 15; lines 15-20), such that different types of attention shifting display elements are determined for different distances (see at least page 4, line 18; page 7, lines 15-17; page 8, lines 14-18 and 27-29; page 9 lines 1 and 2; page 11, lines 28-34; and page 12, line 22; and Fig. 5, S1000).

The invention of claim 30 is directed to a system of determining an attention shifting display element. The system includes an attention determination circuit that determines the focus of attention (see at least page 2, line 19; page 4, lines 18 and 27-30, page 7, lines 15-17; page 8, lines 14-18 and 27-29; page 9, lines 1 and 2; page 11, lines 28-34, and page 12, line 22; and Fig. 4, S200; and Fig. 5 S1000), a display event location circuit that determines the location of the display event (see at least page 4, line 19; page 7, lines 15-17; page 9, line 14; page 13, lines 3-7; and Fig. 4, S400; and Fig. 5, S1200), and an attention directing indicator circuit that determines an attention directing portion of an attention shifting display event based on a distance between the focus of attention and the location of the display event (see at least page 10, line 34 through page 11, line 2; page 11, lines 5-24; page 12, lines 26-30; page 13, lines 23-30; and page 15; lines 15-20). The attention directing indicator circuit determines the attention directing portion of the attention shifting display event such that different types of attention shifting display elements are determined for different distances

(see at least page 4, line 18; page 7, lines 15-17; page 8, lines 14-18 and 27-29; page 9 lines 1 and 2; page 11, lines 28-34; and page 12, line 22; and Fig. 5, S1000).

The invention of claim 37 is directed to a computer readable storage medium including a computer readable program code embodied on the computer readable storage medium. The computer readable program code usable to program a computer for shifting attention comprising the steps of determining the location for a focus of attention (see at least page 2, line 19; page 4, lines 18 and 27-30, page 7, lines 15-17; page 8, lines 14-18 and 27-29; page 9, lines 1 and 2; page 11, lines 28-34, and page 12, line 22; and Fig. 4, S200; and Fig. 5 S1000), determining an display event (see at least page 2, line 19; page 9, lines 3 and 11-13; and Fig. 4 S300) and determining the location of the display event (see at least page 4, line 19; page 7, lines 15-17; page 9, line 14; page 13, lines 3-7; and Fig. 4, S400; and Fig. 5, S1200). The method further includes determining an attention shifting display element based on the display event, and the determined location of the display event (see at least page 2, lines 19-21; page 4, lines 20-22; page 7, line 17-19; page 9, lines 23-25; page 10, lines 30-34; page 14, lines 7-14; page 15, lines 8 and 9; and page 18, lines 15-17; and Fig. 6, S1520), and determining a distance between the focus of attention and the display event (page 4, 19-20; page 8, lines 9-11 and 20-28; page 13, lines 7-14; and page 20, lines 19-24; and Fig. 5, S1300). The attention shifting display element is determined based on the determined distance (see at least page 10, line 34 through page 11, line 2; page 11, lines 5-24; page 12, lines 26-30; page 13, lines 23-30; and page 15; lines 15-20), such that different types of attention shifting display elements are determined for different distances (see at least page 4, line 18; page 7, lines 15-17; page 8, lines 14-18 and 27-29; page 9 lines 1 and 2; page 11, lines 28-34; and page 12, line 22; and Fig. 5, S1000).

The invention of claim 39 is directed to a means of shifting attention including means for determining the location for a focus of attention (see at least page 2, line 19; page 4, lines 18 and 27-30, page 7, lines 15-17; page 8, lines 14-18 and 27-29; page 9, lines 1 and 2; page 11, lines 28-34, and page 12, line 22; and Fig. 4, S200; and Fig. 5 S1000), means for determining a display event (see at least page 2, line 19; page 9, lines 3 and 11-13; and Fig. 4 S300) and means for determining the location of the display event (see at least page 4, line 19; page 7, lines 15-17; page 9, line 14; page 13, lines 3-7; and Fig. 4, S400; and Fig. 5, S1200). The means of shifting attention further includes means for determining an attention shifting display element based on the display event, the determined location of the display event and the focus of attention (see at least page 2, lines 19-21; page 4, lines 20-22; page 7, line 17-19; page 9, lines 23-25; page 10, lines 30-34; page 14, lines 7-14; page 15, lines 8 and 9; and page 18, lines 15-17; and Fig. 6, S1520) and means for determining a distance between the focus of attention and the display event (page 4, 19-20; page 8, lines 9-11 and 20-28; page 13, lines 7-14; and page 20, lines 19-24; and Fig. 5, S1300). The attention shifting display element is determined based on the determined distance (see at least page 10, line 34 through page 11, line 2; page 11, lines 5-24; page 12, lines 26-30; page 13, lines 23-30; and page 15; lines 15-20), such that different types of attention shifting display elements are determined for different distances (see at least page 4, line 18; page 7, lines 15-17; page 8, lines 14-18 and 27-29; page 9 lines 1 and 2; page 11, lines 28-34; and page 12, line 22; and Fig. 5, S1000).

The invention of claim 40 is directed to a means of determining an attention shifting display element. The means of determining an attention shifting display element includes means for determining a focus of attention (see at least page 2, line 19; page 4, lines 18 and 27-30, page 7, lines 15-17; page 8, lines 14-18 and 27-29; page 9, lines 1 and 2; page 11, lines 28-34, and page 12, line 22; and Fig. 4, S200; and Fig. 5 S1000), means for determining a location of a display event (see at least page 4, line 19; page 7, lines 15-17; page 9, line 14;

page 13, lines 3-7; and Fig. 4, S400; and Fig. 5, S1200), means for determining an attention directing portion of an attention shifting display element based on a distance between the focus of attention and the location of the display event (see at least page 10, line 34 through page 11, line 2; page 11, lines 5-24; page 12, lines 26-30; page 13, lines 23-30; and page 15; lines 15-20). The means for determining an attention directing portion of an attention shifting display element does so such that different types of attention shifting display elements are determined for different distances (see at least page 4, line 18; page 7, lines 15-17; page 8, lines 14-18 and 27-29; page 9 lines 1 and 2; page 11, lines 28-34; and page 12, line 22; and Fig. 5, S1000).

**VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

The following grounds of rejection are presented for review:

1) Claims 1, 3-5, 10, 12-18, 37, 39-42 and 45-47 are rejected under 35 U.S.C. §102(b) over Microsoft Excel (User's Guide Microsoft Excel, Version 5.0 1993) (Excel);

2) Claims 19, 21-23, 28, 30-36, 43 and 44 are rejected under 35 U.S.C. §103(a) over Excel;

3) Claims 7, 9, 25 and 27 are rejected under 35 U.S.C. §103(a) over Excel in view of Grudin (Grudin, J. *Partitioning digital worlds focal and peripheral awareness in Multiple Monitor Use*, 2001); and

(4) Claims 6, 8, 11, 24, 26 and 29 are rejected under 35 U.S.C. §103(a) over Excel in view of Grudin, and further in view of Tan et al. (Tan et al. *Effects of Visual Separation and Physical Discontinuities When Distributing Information Across Multiple Displays*. 2003.) (Tan).

## **VII. ARGUMENT**

The Examiner rejects claims 1, 3-5, 10, 12-18, 37, 39-42 and 45-47 under 35 U.S.C. §102(b) over Excel, and rejects claims 6-9, 11, 19, 21-36, 43 and 44 under 35 U.S.C. §103(a) over various combinations of Excel, Grudin and Tan. However, the Examiner has consistently improperly applied the law relating to anticipation and obviousness. Proper application of the law demonstrates that no *prima facie* case of anticipation or obviousness has been shown, and that the claimed invention is not anticipated by and would not have been obvious over Excel, alone or in any combination with Grudin and/or Tan. the applied references.

### **A. Claims 1, 3-5, 10, 12-18, 37, 39-42 Are Not Anticipated By Microsoft Excel**

As presented in Applicants' November 20, 2007 reply to the Final Rejection and the Pre-Appeal Brief Request for Review, Excel fails to disclose or suggest determining a distance between the focus of attention and the display event, as recited in independent claim 1 and similarly recited in claims 37 and 39. The Office Action alleges that Excel teaches determining a distance as the "length of tracer arrow," from the beginning of the active cell to the point of the arrow. Applicants respectfully disagree. The applied reference makes no indication or reference to the length of the tracer arrow, but instead discloses tracers that "track data flow by drawing arrows connecting the active cell with related cells on your worksheet. Tracer arrows point in the direction of data flow." See page 668, section "About Tracer Arrows" from Excel. Thus, Excel merely discloses that a trace arrow will originate in one cell and terminate in another cell. Thus, Excel fails to disclose or suggest determining a distance between the focus of attention and the display event.

The Advisory Action asserts "one skilled in the art has to infer that some sort of calculations of the 'length of the tracer arrow' has to be taken into consideration by the system in order to draw the arrow accordingly." Applicants respectfully disagree, Excel does not

inherently indicate that a distance has been determined. Further, the graphic generating software used by Excel need only know the relative pixel coordinates between the two cells, not the distance. The arrow can then be drawn by many methods not requiring a calculation or determination of distance, for example determining the slope of the trace arrow and subsequently generating the trace arrow graphic starting at one cell and using the slope and horizontal range. In this example no distance is calculated.

Furthermore, Excel fails to disclose or suggest taking into consideration the physical size of the display, as disclosed by the current application. See page 10, lines 17-20. Therefore, it is impossible for Excel to disclose determining a distance. Thus, Excel fails to disclose or suggest determining a distance between the focus of attention and the display event, as recited in independent claim 1 and similarly recited in claims 37 and 39.

Further, Excel fails to disclose or suggest wherein the attention shifting display element is determined based on the determined distance such that different types of attention shifting display elements are determined for different distances, as recited by independent claim 1 and similarly recited in independent claims 12, 37, 39 and 40. Excel discloses, as acknowledged by the Final Rejection, displaying "different tracer arrows depending on tracer type" (Final Rejection, page 3). On page 669 Excel discloses "the tracers produce three types of arrows." The three types of arrows are solid blue, solid red, and dashed black with icon. These three types of arrows are used to indicate the tracer type, as acknowledged by the Final Rejection and disclosed by Excel. The tracer types are defined by Excel as Formula, Error and External reference or reference to another sheet in the same workbook, and correspond to the solid blue arrow, solid red arrow, and dashed black arrow with icon, respectively. See Excel, page 669. Thus, Excel bases its tracer type on the conditions of the originating cell and not a determined distance. Therefore, Excel fails to disclose or suggest the attention shifting display element is determined based on the determined distance such that different



types of attention shifting display elements are determined for different distances, as recited by independent claim 1 and similarly recited in independent claims 12, 37, 39 and 40.

Excel fails to disclose or suggest the combination of features of independent claims 1, 12, 37, 39 and 40. Grudin and Tan fail to cure the deficiencies of Excel, and therefore independent claims 1, 12, 37, 39 and 40 and their dependent claims are patentable over Excel, Grudin and Tan, whether taken in individually or in combination. Appellants request reversal of all rejections of claims 1, 3-5, 10, 12-18, 37, 39-42 and 45-47.

**B. Claims 19, 21-23, 28, 30-36, 43 and 44 Would Not Have Been Obvious Over Microsoft Excel**

As discussed above and presented in Applicants' November 20, 2007 reply to the Final Rejection and the Pre-Appeal Brief Request for Review, independent claim 19 also recites determining a distance between the focus of attention and the display event. As discussed in section A, above, Excel fails to disclose or render obvious the claimed feature, and therefore claim 19, and its dependent claims, are patentable over Excel for at least that reason.

Furthermore, as was also discussed above in section A, Excel fails to disclose or suggest wherein the attention shifting display element is determined based on the determined distance such that different types of attention shifting display elements are determined for different distances, as recited in independent claims 19 and 30. Therefore claims 19 and 30 and their dependent claims are patentable over Excel for at least this reason.

Thus, for the same reasons presented above with regard to claims 1, 12, 37, 39 and 40, Excel fails to disclose or suggest the combination of features of independent claims 19 and 30. Grudin and Tan fail to cure the deficiencies of Excel, and therefore independent claims 19 and 30 and their dependent claims are patentable over Excel, Grudin and Tan, whether

taken in individually or in combination. Appellants request reversal of all rejections of claims 19, 21-23, 28, 30-36 and 43-44.

**C.     **Claims 7, 9, 25 and 27 Would Not Have Been Obvious Over Microsoft Excel in View of Grudin****

Claims 7 and 9 depend from independent claim 1 and 25 and 27 depend from independent claim 19. Claims 1 and 19 are patentable over Excel for the reasons discussed above. Grudin fails to cure these deficiencies of Excel, and therefore, claims 7, 9, 25 and 27 also are patentable over Excel and Grudin for at least the same reasons. Appellants request reversal of all rejections of claims 7, 9, 25 and 27.

**D.     **Claims 6, 8, 11, 24, 26 and 29 Would Not Have Been Obvious Over Microsoft Excel in View of Grudin and further in view of Tan****

Claims 6, 8, 11, 24, 26 and 29 depend from independent claims 1 and 19, respectively. Claims 1 and 19 are patentable over Excel for the reasons discussed above. Grudin and Tan fail to cure these deficiencies of Excel, and therefore, claims 6, 8, 11, 24, 26 and 29 also are patentable over Excel and Grudin for at least the same reasons. Appellants request reversal of all rejections of claims 6, 8, 11, 24, 26 and 29.

**VIII. CONCLUSION**

For all of the reasons discussed above, it is respectfully submitted that the rejections are in error and that claims 1, 3-19, 21-37 and 39-47 are in condition for allowance. For all of the above reasons, Appellants respectfully request this Honorable Board to reverse the rejections of claims 1, 3-19, 21-37 and 39-47.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "James A. Oliff", enclosed within a large, loopy oval shape.

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**APPENDIX A - CLAIMS APPENDIX**

CLAIMS INVOLVED IN THE APPEAL:

1. A method of shifting attention comprising the steps of:
  - determining the location for a focus of attention;
  - determining a display event;
  - determining the location of the display event;
  - determining an attention shifting display element based on the display event, the determined location of the display event and the focus of attention; and
  - determining a distance between the focus of attention and the display event;wherein the attention shifting display element is determined based on the determined distance, such that different types of attention shifting display elements are determined for different distances.
3. The method of claim 1, wherein the focus of attention is determined based on at least one of: monitoring user actions and monitoring user activity.
4. The method of claim 3 wherein user actions are monitored based on at least one of eye-tracking, head tracking, arm tracking, user selection tracking, video information, audio information and gestures.
5. The method of claim 1, wherein the display event is associated with at least one of animated information, static information and help information.
6. The method of claim 1, wherein the focus of attention is located on a first display and the display event is located on a second display.
7. The method of claim 1, wherein the distance between the focus of attention and display event includes at least one non-sensible portion.

8. The method of claim 6, wherein the distance between the focus of attention and the display event includes at least one non-sensible portion.

9. The method of claim 1, wherein determining the attention shifting display element comprises the steps of:

determining a dynamic attention shifting display element based on a display event located at the periphery of attention; and

determining a static attention shifting display element based on a display event located at the focus of attention.

10. The method of claim 1, wherein determining the attention shifting display element comprises determining a combination attention shifting display element based on a display event located more than a threshold distance from the focus of attention.

11. The method of claim 9, wherein the focus of attention is located on a first display and the display event is located on a second display.

12. A method of determining an attention shifting display element comprising the steps of:

determining a focus of attention;

determining a location of a display event;

determining an attention directing portion of an attention shifting display element based on a distance between the focus of attention and the location of the display event, such that different types of attention shifting display elements are determined for different distances.

13. The method of claim 12, further comprising determining an attention attracting portion of an attention shifting display element based on the distance between the location of the display event and the location of the focus of attention.

14. The method of claim 12, further comprising determining at least one information portion within the focus of attention, associated with the attention shifting display element, and where the information portion displays information associated with the display event.

15. The method of claim 14, where the information portion is at least one of: a mathematical operator and a symbolic operator.

16. The method of claim 12, where the attention shifting display element is dynamically determined based on continued focus of attention on a display region.

17. The method of claim 16, where the continued focus of attention is determined based on user monitoring.

18. The method of claim 12, where the attention shifting display element is dynamically determined based on continued focus of attention on the display event and wherein the display event is based on at least one of: a mouse event; a keyboard event and exceeding a threshold time.

19. A system of shifting attention comprising:  
an input/output circuit for receiving a display event information;  
a memory;  
a processor;  
an attention determination circuit that determines a focus of attention;  
a display event location determination circuit that determines the location of the display event;  
an attention shifting display element determination circuit that determines an attention shifting display element based on the display event information, the location of the display event and the location of the focus of attention; and

a distance determination circuit that determines the distance between the focus of attention and the display event,

wherein the attention shifting display element is determined based the determined distance, such that different types of attention shifting display elements are determined for different distances.

21. The system of claim 19, where the focus of attention is determined based on at least one of: monitoring user actions and monitoring user activity.

22. The system of claim 21 where the user actions are monitored based on at least one of eye-tracking, head tracking, arm tracking, user selection tracking, video information, audio information and gestures.

23. The system of claim 19, where the display event is at least one of animated information, static information and a help message.

24. The system of claim 19, wherein the focus of attention is located on a first display and the display event is located on a second display.

25. The system of claim 19, where the distance between the focus of attention and display event includes at least one non-sensible portion.

26. The system of claim 24, where the distance between the focus of attention and the display event includes at least one non-sensible portion.

27. The system of claim 19, where determining the attention shifting display element comprises the steps of:

determining a dynamic attention shifting display elements based on a display event located at the periphery of attention; and

determining a static attention shifting display element based on a display event located at the focus of attention.

28. The system of claim 19, where determining the attention shifting display element comprises determining a fusing attention shifting display element based on a display event located more than a threshold distance from the focus of attention.

29. The system of claim 27, wherein the focus of attention is located on a first display and the display event is located on a second display.

30. A system of determining an attention shifting display element comprising:  
an attention determination circuit that determines the focus of attention;  
a display event location circuit that determines the location of the display event; and

an attention directing indicator circuit that determines an attention directing portion of an attention shifting display event based on a distance between the focus of attention and the location of the display event, such that different types of attention shifting display elements are determined for different distances.

31. The system of claim 30, further comprising the step of determining an attention attracting portion of the attention shifting display element based on the distance between the location of the display event and the location of the attention.

32. The system of claim 30, further comprising the step of determining at least one static information portion within the focus of attention associated with the attention shifting display element, and where the static information portion displays information associated with the display event.

33. The system of claim 32, where the information portion is at least one of: a mathematical operator and a symbolic operator.

34. The system of claim 30, where the attention shifting display element is dynamically determined based on continued focus of attention on the display event.



35. The system of claim 34, where the continued focus of attention is based on user monitoring.

36. The system of claim 30, wherein the continued focus of attention on a display event is based on at least one of: a mouse event; a keyboard event, exceeding a threshold time.

37. Computer readable storage medium comprising: computer readable program code embodied on the computer readable storage medium, the computer readable program code usable to program a computer for shifting attention comprising the steps of:

determining the location for a focus of attention;

determining an display event;

determining the location of the display event;

determining an attention shifting display element based on the display event, and the determined location of the display event; and

determining a distance between the focus of attention and the display event;

wherein the attention shifting display element is determined based on the determined distance, such that different types of attention shifting display elements are determined for different distances.

39. A means of shifting attention comprising:  
means for determining the location for a focus of attention;  
means for determining a display event;  
means for determining the location of the display event;  
means for determining an attention shifting display element based on the display event, the determined location of the display event and the focus of attention; and  
means for determining a distance between the focus of attention and the display event;

wherein the attention shifting display element is determined based on the determined distance, such that different types of attention shifting display elements are determined for different distances.

40. A means of determining an attention shifting display element comprising:  
means for determining a focus of attention;  
means for determining a location of a display event;  
means for determining an attention directing portion of an attention shifting display element based on a distance between the focus of attention and the location of the display event, such that different types of attention shifting display elements are determined for different distances.

41. The method of claim 1, wherein the attention shifting display element is determined based on the location of the display event and the determined distance.

42. The method of claim 12, wherein the attention directing portion is determined based on the location of the display event and the determined distance.

43. The system of claim 19, wherein the attention shifting display element is determined based on the location of the display event and the determined distance.

44. The system of claim 30, wherein the attention directing portion is determined based on the location of the display event and the determined distance.

**APPENDIX B - EVIDENCE APPENDIX**

NONE

**APPENDIX C - RELATED PROCEEDINGS APPENDIX**

NONE